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EXAMINER

NICKERSON, JEFFREY L

ART UNIT

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2142

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/517,448 | <b>Applicant(s)</b><br>PEDERSEN ET AL. |  |
|                              | <b>Examiner</b><br>JEFFREY NICKERSON | <b>Art Unit</b><br>2142                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-37 and 39-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-37 and 39-72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This communication is in response to Application No. 10/517,448 filed on nationally on 09 December 2004 and internationally on 13 June 2002. The amendment presented on 02 April 2008, which cancels claim 38, provides change to the specification and claims 20-37, and adds claims 39-72, is hereby acknowledged. Claims 20-37 and 39-72 have been examined.

#### ***Drawings***

2. The amendment presented on 02 April 2008 providing change to the specification and a replacement drawing sheet for Figures 3 and 4 is noted and accepted. All prior objections to the drawings are hereby withdrawn.

#### ***Specification***

3. The amendment presented on 02 April 2008 providing change to the specification is noted. All prior objections to the specification are hereby withdrawn.

#### ***Claim Objections***

4. The amendment presented on 02 April 2008 providing change to the claims is noted. All prior objections to the claims are hereby withdrawn; however, new objections are being made to the claims.

5. Claims 20-37 and 39-72 are objected to under 37 CFR 1.75(d)(1) because of the following informalities: lack of or confusing antecedent basis.

Regarding claim 20, the phrase “physical shared downlink channel” should be changed to “physical downlink shared channel” to be common with art-accepted terminology. The phrase “the downlink shared channel (PtxDSCHallowed)” should be changed to “a downlink shared channel (PtxDSCHallowed)”. Claims 29, 39, 48, and 60 contain similar errors.

Regarding claim 21, the phrase describing A should be changed to “the relative activity factor off the **physical** downlink shared channel” in order to be consistent with claim 20’s definition (Or just use the acronym PDSCH like claim 22, since A is already defined). The phrase describing PtxPDSCHallowed should be changed to “a power allowed for the physical **downlink shared** channel” in order to be common with art-accepted terminology. The phrase “decrease reserved power” should be changed to “decrease the allowed power level of the downlink shared channel” in order to be consistent with the phrase before the “if” statement. Claims 30, 40, 49, and 61 contain similar errors.

Regarding claim 22, the phrase describing PtxDSCHest should be changed to “an estimated power of the downlink **shared** channel” in order to distinguish between the two downlink channels. The phrase describing PtxPDSCHallowed should be changed

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to a "a power allowed for the physical **downlink shared** channel" in order to be common with art-accepted terminology. Claims 31, 41, 50, and 62 contain similar errors.

Regarding claim 29, the phrase "said resource manager" lacks antecedent basis.

Any dependent claims not specifically addressed inherit the informality of their parent independent claim.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. The amendment presented on 02 April 2008 providing change to the claims is noted. All prior rejections under 35 USC 112 are hereby withdrawn; however, new rejections are being made.

8. Claims 21, 27, 30, 32, 36, 40, 46, 51-52, 55, 63-64, and 67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claims 21, 30, and 40 the phrase “preferably by X or a fraction thereof” is ambiguous as to whether it is an actual limitation, and, when X is defined as “a certain set value”, the statement encompasses decreasing the allowed power level of the DSCH by any arbitrary number. For purposes of further examination, the examiner will not treat this as a limitation.

Regarding claims 27, 36, 46, 55, and 67 the term "highly loaded" is a relative term which renders the claim indefinite. The term "highly loaded" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claims 32, 51-52, and 63-64, the phrases “allow(ing) higher bit rates” and “decreasing maximum bit rate” renders the claim indefinite because it is unclear whether the limitation(s) are part of the claimed invention or just a causal effect. See MPEP § 2173.05(d).

#### ***Allowable Subject Matter***

9. The indicated allowability of claims 20-37 and 39-47 is withdrawn in view of the newly discovered reference(s) to Gopalakrishnan et al. Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 20-25, 28-34, 37, 39-44, 47, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), and in further view of Tseng ("Code Placement and Replacement Strategies for Wideband CDMA OVSF Code Tree Management", 2001) and Chheda (US 2003/0231586 A1).

Regarding claim 20, Gopalakrishnan teaches a method, comprising:

performing at least three kinds of measurements comprising:

average transmitted power of a physical shared downlink channel

(Gopalakrishnan: [0016] and [0041] specify available transmitted power is known, therefore transmitted power must also be known),

relative activity factor of the physical downlink shared channel (Gopalakrishnan: [0066] specifies calculating activity based on available power), and

code availability (Gopalakrishnan: [0016] and [0041] specify number of available codes are calculated);

wherein said performing of said measurements comprises using one or more parameters comprising a minimum allowed spreading factor and an allowed power level

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of the downlink channel (Gopalakrishnan: [0016] and [0041] specify available transmit power on the downlink shared channel is known, therefore allowed transmit power must be known; [0066]-[0069] specifies activity is measured based on available power),

the one or more parameters being set depending on one or more of traffic load, total cell load (Gopalakrishnan: [0065] specifies that availability of codes indicates total cell load), and availability of channelization codes (Gopalakrishnan: [0016] and [0041] specify availability of codes is used);

adaptive adjusting of a root spreading factor based at least on these kinds of measurements (Gopalakrishnan: [0041] specifies that spreading, modulation and coding are adapted dynamically based on the measurements); and

adaptive adjusting of a characteristic for the downlink shared channel based at least one these kinds of measurements (Gopalakrishnan: [0041] specifies that spreading, modulation and coding are adapted dynamically based on the measurements).

Gopalakrishnan does not teach wherein one of the three measurements is the weighted code blocking rate, nor does Gopalakrishnan teach wherein an adjusted characteristic is the power.

Tseng, in a similar field of endeavor, teaches wherein one of the three measurements is the weighted code blocking rate (Tseng: abstract specifies blocking probability; pg 565, left column, paragraphs 1-2 specifies blocking probability can be measured).



It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Tseng for measuring the blocking probability. The teachings of Tseng, when implemented in the Gopalakrishnan system, will allow one of ordinary skill in the art to analyze the code blocking of the system and make allocation adjustments based on the blocking probability. One of ordinary skill in the art would be motivated to utilize the teachings of Tseng in the Gopalakrishnan system in order to utilize the system's maximum capacity based on current number of users trying to use the system.

The Gopalakrishnan/Tseng system does not teach wherein an adjusted characteristic is the power.

Chheda, in a similar field of endeavor, teaches wherein an adjusted characteristic is the power (Chheda: abstract specifies the "protocol" is adjusted, which defines code usage and power).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Chheda for adjusting the power. The teachings of Chheda, when implemented in the Gopalakrishnan/Tseng system, will allow one of ordinary skill in the art to adjust the power on the downlink shared channel based on measurements such as code blocking probability, available transmitted power, and activity of the PDSCH. One of ordinary skill in the art would be motivated to utilize the teachings of Chheda in the Gopalakrishnan/Tseng system in order to optimize the use of system resources, such as power.

Regarding claims 21 and 22, the Gopalakrishnan/Tseng/Chheda method teaches wherein the one or more parameters comprise the allowed power of the downlink shared channel (Gopalakrishnan: [0016] and [0041] specify available transmit power on the downlink shared channel is known, therefore allowed transmit power must be known; [0066]-[0069] specifies activity is measured based on available power; See also Chheda: abstract and [0003] specify protocols that define max available power usage), wherein the allowed power level of the downlink shared channel is adjusted (Chheda: abstract specifies protocol is changed, which defines allowed power usage), and wherein a criteria for adjustment of the allowed power level of the downlink shared channel is:

utilizing monitored and measured system resources, in comparison to threshold values, and adjusting the allowed power accordingly (Chheda: [0005]-[0007] and Figure 4 for power adjustment based on resources and thresholds; Gopalakrishnan: [0066]-[0069] for wherein a resource is activity).

The Gopalakrishnan/Tseng/Chheda system does not teach using the exact equation for determining when to adjust the power.

A person of ordinary skill in the art, upon reading the prior art would have recognized the ability to adjust allowed power of the downlink shared channel. Since there are a finite number of measurable characteristics related to the resources of a CDMA system, a finite number of predictable results could occur from variations utilizing those characteristics (i.e. increasing capacity of system or decreasing system capacity, increasing utilization or decreasing utilization). Therefore it would have been obvious to

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one of ordinary skill in the art at the time the invention was made to combine the characteristics in an attempt to adapt system parameters based on current measured usage characteristics, as a person of ordinary skill has good reason to pursue the known options within their technical grasp. In turn, because the adjustable power conditions defined by applicant have the properties predicted by the prior art and there are a finite number of predictable results obtained from manipulating these characteristics, it would have been obvious to make the calculations using the equations defined by the applicant.

Regarding claims 23 and 24, the Gopalakrishnan/Tseng/Chheda method teaches wherein the one or more parameters comprise the minimum allowed spreading factor (Gopalakrishnan: [0041] specifies that spreading, modulation and coding are adapted dynamically based on the measurements; See also Chheda: abstract, which specifies adjusting available codes which inherently must involve changing spreading factor) wherein the minimum allowed spreading factor is adjusted (Chheda: abstract specifies protocol is changed, which defines amount of codes used, i.e. spreading factor), and wherein a criteria for adjustment of the minimum allowed spreading factor is:

utilizing monitored and measured system resources, in comparison to threshold values, and adjusting the minimum allowed spreading factor accordingly (Chheda: [0005]-[0007], [0002] and Figure 4 for adjusting number of available codes, i.e. spreading factor, on resources and thresholds; Gopalakrishnan: [0066]-[0069] for

wherein a resource is activity; Tseng: abstract for wherein a resource is code blocking probability).

The Gopalakrishnan/Tseng/Chheda system does not teach using the exact equation for determining when to adjust the minimum spreading factor.

A person of ordinary skill in the art, upon reading the prior art would have recognized the ability to adjust the minimum spreading factor. Since there are a finite number of measurable characteristics related to the resources of a CDMA system, a finite number of predictable results could occur from variations utilizing those characteristics (i.e. increasing capacity of system or decreasing system capacity, increasing utilization or decreasing utilization). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the characteristics in an attempt to adapt system parameters based on current measured usage characteristics, as a person of ordinary skill has good reason to pursue the known options within their technical grasp. In turn, because the adjustable minimum spreading factor defined by applicant have the properties predicted by the prior art and there are a finite number of predictable results obtained from manipulating these characteristics, it would have been obvious to make the calculations using the equations defined by the applicant.

Regarding claim 25, the Gopalakrishnan/Tseng/Chheda system teaches further comprising:

allocating a channelization code (Tseng: pg 563, section III, section A);

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wherein the allocation of the channelization code comprises:

reserving a new root code with a given spreading factor (Tseng: pg 563, section III, section A), and

deciding where in a code tree this reservation is to be made (Tseng: pg 563, section III, section A).

Regarding claim 28, the Gopalakrishnan/Tseng/Chheda system teaches wherein the one or more parameters is set depending on at least the total cell load, and wherein the total cell load is measured by power (Gopalakrishnan: [0065] specifies that availability of codes indicates total cell load; Chheda: Figure 4 indicates a total cell load threshold, i.e. code blocking threshold, which is measured by either power or code usage).

Regarding claim 29, this apparatus claim contains limitations corresponding to those of claim 20 and the same rationale of rejection is used, where applicable.

Regarding claim 30, this apparatus claim contains limitations corresponding to those of claim 21 and the same rationale of rejection is used, where applicable.

Regarding claim 31, this apparatus claim contains limitations corresponding to those of claim 22 and the same rationale of rejection is used, where applicable.

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Regarding claim 32, this apparatus claim contains limitations corresponding to those of claim 23 and the same rationale of rejection is used, where applicable.

Regarding claim 33, this apparatus claim contains limitations corresponding to those of claim 24 and the same rationale of rejection is used, where applicable.

Regarding claim 34, this apparatus claim contains limitations corresponding to those of claim 25 and the same rationale of rejection is used, where applicable.

Regarding claim 37, this apparatus claim contains limitations corresponding to those of claim 28 and the same rationale of rejection is used, where applicable.

Regarding claim 39, this computer readable medium claim contains limitations corresponding to those of claim 20 and the same rationale of rejection is used, where applicable.

Regarding claim 40, this computer readable medium claim contains limitations corresponding to those of claim 21 and the same rationale of rejection is used, where applicable.

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Regarding claim 41, this computer readable medium claim contains limitations corresponding to those of claim 22 and the same rationale of rejection is used, where applicable.

Regarding claim 42, this computer readable medium claim contains limitations corresponding to those of claim 23 and the same rationale of rejection is used, where applicable.

Regarding claim 43, this computer readable medium claim contains limitations corresponding to those of claim 24 and the same rationale of rejection is used, where applicable.

Regarding claim 44, this computer readable medium claim contains limitations corresponding to those of claim 25 and the same rationale of rejection is used, where applicable.

Regarding claim 47, this computer readable medium claim contains limitations corresponding to those of claim 28 and the same rationale of rejection is used, where applicable.

Regarding claim 72, the Gopalakrishnan/Tseng/Chheda system teaches wherein the apparatus comprises a resource manager (Gopalakrishnan: Figure 2, Rate predictor).

12. Claims 26, 35, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), in view of Tseng ("Code Placement and Replacement Strategies for Wideband CDMA OVSF Code Tree Management", 2001) and Chheda (US 2003/0231586 A1), and in further view of Cao et al (US 2002/0089952 A1).

Regarding claim 26, the Gopalakrishnan/Tseng/Chheda system does not teach wherein codes for downlink are assigned in the code tree starting from a certain limb of the code tree, and codes are assigned for users in another limb of the code tree.

Cao, in a similar field of endeavor, teaches wherein codes for downlink are assigned in the code tree starting from a certain limb of the code tree (Cao: [0088]), and codes are assigned for users in another limb of the code tree (Cao: [0085]-[0088]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Cao for reserving a sub-tree for shared downlink use. The teachings of Cao, when implemented in the Gopalakrishnan/Tseng/Chheda system, will allow one of ordinary skill in the art to manage the allocation of CDMA codes based on various measurements and reservation of sub-trees for specific tasks, such as shared downlink usage. One of ordinary skill in the art would be motivated to utilize the teachings of Cao in the Gopalakrishnan/Tseng/Chheda system in order to more effective management of code allocation.



Regarding claim 35, this apparatus claim contains limitations corresponding to those of claim 26 and the same rationale of rejection is used, where applicable.

Regarding claim 45, this computer readable medium claim contains limitations corresponding to those of claim 26 and the same rationale of rejection is used, where applicable.

13. Claims 27, 36, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), in view of Tseng ("Code Placement and Replacement Strategies for Wideband CDMA OVSF Code Tree Management", 2001), Chheda (US 2003/0231586 A1), and Cao et al (US 2002/0089952 A1), and in further view of TS 25.308 ("3GPP; Technical Specification Radio Access Network; HSDPA; Overall Description", March 2002).

Regarding claim 27, the Gopalakrishnan/Tseng/Chheda/Cao system teaches wherein a default capacity is allocated to a territory (Chheda: Figure 4), wherein the territory is used by DSCH when allowed by a total code tree load (Cao: [0088] specifies allocating sub-tree to DSCH; abstract specifies UMTS network; Chheda: Figure 4 for total tree load), and wherein the spreading factor is increased when the code tree is highly loaded (Chheda: abstract specifies "protocol" changes are based on code and power usage, i.e. highly loaded).

The Gopalakrishnan/Tseng/Chheda/Cao system does not teach wherein the channel is a HS-DSCH.

TS 25.308, in a similar field of endeavor, teaches wherein the channel is a HS-DSCH (TS 25.308: pg 7, section 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of TS 25.308 for using a High Speed DSCH. The teachings of TS 25.308, when implemented in the Gopalakrishnan/Tseng/Chheda/Cao system, will allow one of ordinary skill in the art to utilize a faster downlink channel in the automated resource management system. One of ordinary skill in the art would be motivated to utilize the teachings of TS 25.308 in the Gopalakrishnan/Tseng/Chheda/Cao system in order to practice the system using industry standards for providing high speed downlink access.

Regarding claim 36, this apparatus claim contains limitations corresponding to those of claim 27 and the same rationale of rejection is used, where applicable.

Regarding claim 46, this computer readable medium claim contains limitations corresponding to those of claim 27 and the same rationale of rejection is used, where applicable.

14. Claims 48-53, 56, 60-65, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), in view of Tseng ("Code

Placement and Replacement Strategies for Wideband CDMA OVFS Code Tree Management”, 2001) and Chheda (US 2003/0231586 A1), and in further view of Weinberg (US 5,138,311).

Regarding claim 48, this claim comprises limitations found within claim 20 and the same rationale of rejection is used, where applicable. And wherein:

the weighted code blocking rate being defined as the relative time during observation period where a larger bit rate than the allocated bit rate could have been allocated to a user equipment according to a link adaptation criteria for controlling the downlink shared channel (Chheda: abstract, [0027]-[0028], and Figures 1, 2, and 4 provides for identifying when larger bit rates, i.e. more power and less codes, can be allocated to the UE).

the relative activity factor is for the physical downlink shared channel (Gopalakrishnan: [0066] specifies calculating activity based on available power for shared downlink).

The Gopalakrishnan/Tseng/Chheda system does not teach wherein the relative activity factor defines the ratio between silence and activity of the channel during an observation period.

Weinberg, in a similar field of endeavor, teaches wherein the relative activity factor defines the ratio between silence and activity of the channel during an observation period (Weinberg: Figures 4A and 4B; See also col 2, line 54 – col 3, line 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Weinberg for calculating activity of a channel based on a ratio of active-time to idle-time. The teachings of Weinberg, when implemented in the Gopalakrishnan/Tseng/Chheda system, will allow one of ordinary skill in the art to manage the allocation of CDMA codes based on various measurements, such as channel activity. One of ordinary skill in the art would be motivated to utilize the teachings of Weinberg in the Gopalakrishnan/Tseng/Chheda system in order to more accurate way of measuring channel activity.

Regarding claim 49, this method claim comprises limitations found within claim 21 and the same rationale of rejection is used, where applicable.

Regarding claim 50, this method claim comprises limitations found within claim 22 and the same rationale of rejection is used, where applicable.

Regarding claim 51, this method claim comprises limitations found within claim 23 and the same rationale of rejection is used, where applicable.

Regarding claim 52, this method claim comprises limitations found within claim 24 and the same rationale of rejection is used, where applicable.

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Regarding claim 53, this method claim comprises limitations found within claim 25 and the same rationale of rejection is used, where applicable.

Regarding claim 56, this method claim comprises limitations found within claim 28 and the same rationale of rejection is used, where applicable.

Regarding claim 60, this apparatus claim comprises limitations found within claim 48 and the same rationale of rejection is used, where applicable.

Regarding claim 61, this apparatus claim comprises limitations found within claim 21 and the same rationale of rejection is used, where applicable.

Regarding claim 62, this apparatus claim comprises limitations found within claim 22 and the same rationale of rejection is used, where applicable.

Regarding claim 63, this apparatus claim comprises limitations found within claim 23 and the same rationale of rejection is used, where applicable.

Regarding claim 64, this apparatus claim comprises limitations found within claim 24 and the same rationale of rejection is used, where applicable.

Regarding claim 65, this apparatus claim comprises limitations found within claim 25 and the same rationale of rejection is used, where applicable.

Regarding claim 68, this apparatus claim comprises limitations found within claim 28 and the same rationale of rejection is used, where applicable.

15. Claims 54 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), in view of Tseng ("Code Placement and Replacement Strategies for Wideband CDMA OVSF Code Tree Management", 2001), Chheda (US 2003/0231586 A1), and Weinberg (US 5,138,311), and in further view of Cao et al (US 2002/0089952 A1).

Regarding claim 54, the Gopalakrishnan/Tseng/Chheda/Weinberg system does not teach wherein codes for downlink are assigned in the code tree starting from a certain limb of the code tree, and codes are assigned for users in another limb of the code tree.

Cao, in a similar field of endeavor, teaches wherein codes for downlink are assigned in the code tree starting from a certain limb of the code tree (Cao: [0088]), and codes are assigned for users in another limb of the code tree (Cao: [0085]-[0088]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Cao for reserving a sub-tree for shared downlink use. The teachings of Cao, when implemented in the Gopalakrishnan/Tseng/Chheda/Weinberg system, will allow one of ordinary skill in the

art to manage the allocation of CDMA codes based on various measurements and reservation of sub-trees for specific tasks, such as shared downlink usage. One of ordinary skill in the art would be motivated to utilize the teachings of Cao in the Gopalakrishnan/Tseng/Chheda/Weinberg system in order to more effective management of code allocation.

16. Claims 55 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), in view of Tseng ("Code Placement and Replacement Strategies for Wideband CDMA OVSF Code Tree Management", 2001), Chheda (US 2003/0231586 A1), Weinberg (US 5,138,311), and Cao et al (US 2002/0089952 A1), and in further view of TS 25.308 ("3GPP; Technical Specification Radio Access Network; HSDPA; Overall Description", March 2002).

Regarding claim 55, the Gopalakrishnan/Tseng/Chheda/Weinberg/Cao system teaches wherein a default capacity is allocated to a territory (Chheda: Figure 4), wherein the territory is used by DSCH when allowed by a total code tree load (Cao: [0088] specifies allocating sub-tree to DSCH; abstract specifies UMTS network; Chheda: Figure 4 for total tree load), and wherein the spreading factor is increased when the code tree is highly loaded (Chheda: abstract specifies "protocol" changes are based on code and power usage, i.e. highly loaded).

The Gopalakrishnan/Tseng/Chheda/Weinberg/Cao system does not teach wherein the channel is a HS-DSCH.

TS 25.308, in a similar field of endeavor, teaches wherein the channel is a HS-DSCH (TS 25.308: pg 7, section 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of TS 25.308 for using a High Speed DSCH. The teachings of TS 25.308, when implemented in the Gopalakrishnan/Tseng/Chheda/Weinberg/Cao system, will allow one of ordinary skill in the art to utilize a faster downlink channel in the automated resource management system. One of ordinary skill in the art would be motivated to utilize the teachings of TS 25.308 in the Gopalakrishnan/Tseng/Chheda/Weinberg/Cao system in order to apply the system to industry standards for providing high speed downlink access.

Regarding claim 67, this apparatus claim comprises limitations found within claim 55 and the same rationale of rejection is used, where applicable.

17. Claims 57-59 and 69-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan et al (US 20020110101 A1), in view of Tseng ("Code Placement and Replacement Strategies for Wideband CDMA OVSF Code Tree Management", 2001), Chheda (US 2003/0231586 A1), and Weinberg (US 5,138,311), and in further view of TS 25.308 ("3GPP; Technical Specification Radio Access Network; HSDPA; Overall Description", March 2002).



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Regarding claim 57, the Gopalakrishnan/Tseng/Chheda/Weinberg system does not teach wherein the downlink shared channel is a high speed downlink shared channel, HS-DSCH.

TS 25.308, in a similar field of endeavor, teaches wherein the channel is a HS-DSCH (TS 25.308: pg 7, section 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of TS 25.308 for using a High Speed DSCH. The teachings of TS 25.308, when implemented in the Gopalakrishnan/Tseng/Chheda/Weinberg system, will allow one of ordinary skill in the art to utilize a faster downlink channel in the automated resource management system. One of ordinary skill in the art would be motivated to utilize the teachings of TS 25.308 in the Gopalakrishnan/Tseng/Chheda/Weinberg system in order to apply the system to industry standards for providing high speed downlink access.

Regarding claim 58, the Gopalakrishnan/Tseng/Chheda/Weinberg/TS 25.308 system teaches wherein the HS-DSCH is part of a high speed downlink packet access, HSDPA (TS 25.308: pgs 12-17, section 6).

Regarding claim 59, the Gopalakrishnan/Tseng/Chheda/Weinberg/TS 25.308 system teaches wherein the HS-DSCH is mapped to a HS-PDSCH (TS 25.308: pgs 9-11, section 5.2.2; See also pg 28, section 10).

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Regarding claim 69, this apparatus claim comprises limitations found within claim 57 and the same rationale of rejection is used, where applicable.

Regarding claim 70, this apparatus claim comprises limitations found within claim 58 and the same rationale of rejection is used, where applicable.

Regarding claim 71, this apparatus claim comprises limitations found within claim 59 and the same rationale of rejection is used, where applicable.

***Cited Pertinent Prior Art***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Cao et al (US 7,039,092 B1) discloses a system for allocating channelization codes using required spreading factors.
- b. Gopalakrishnan et al (US 6,859,446 B1) discloses a system for controlling power and data rates for CDMA systems.
- c. Gopalakrishnan et al (US 7,006,464 B1) discloses a system that efficiently uses OVSF code space and transmit power for shared downlink and uplink channels.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY NICKERSON whose telephone number is (571)270-3631. The examiner can normally be reached on M-Th, 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/J. N./  
Jeffrey Nickerson  
Examiner, Art Unit 2142

/Andrew Caldwell/  
Supervisory Patent Examiner, Art Unit 2142